Study of Clinical and Laboratory Profile of Fever with Thrombocytopenia in Tertiary Hospital

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ABSTRACT

Introduction: Fever is the most challenging problem in the field of medicine, consists of occult manifestation of common diseases rather than the actual diseases. An A.M temperature of >37.2°C (98.9°F) or a P.M temperature of > 37.7°C (99.9°F) will be considered as fever. Thrombocytopenia is defined as platelet count <150,000/µl. This is due to decreased production of platelets, increased destruction and increased sequestration in the spleen. Study aimed to evaluate clinical and laboratory profile in patients having fever with thrombocytopenia.

Material and methods: A series of 100 patients admitted in SMBT Medical College and Hospital with fever and thrombocytopenia were evaluated. During the hospital stay, all the patients were subjected repeat CBC once in 2 days. Follow up of all patients regarding treatment and outcomes were done during the hospital stay.

Results: Out of 100 cases of fever with thrombocytopenia, 62 were males and 38 were females. The most common cause was malaria in 38% of cases followed by dengue in 30% of cases and septicemia in 17% of cases. Based on severity mild, moderate and severe thrombocytopenia observed in 47%, 35% and 18% respectively. Bleeding manifestations were seen in 36 patients. 94 patients recovered and 6 expired.

Conclusion: Fever with thrombocytopenia is one of the challenging problems in the field of medicine. Bleeding manifestations associated with thrombocytopenia were seen among dengue cases. Platelet transfusions should be carried out as per WHO guidelines. Thus a well organized systemic approach needs to be carried out with an awareness of different causes of fever with thrombocytopenia which can help to diagnose and manage the case early.

Keywords: Clinical and Laboratory Profile, Fever

INTRODUCTION

Fever is an inescapable topic in human myth, workmanship and science. Fever is such a typical sign of disease that it is not astonishing to find precise depictions of the febrile patients in early-written history. Most episodes of delayed fevers are examples of surely understood ailments showing them atypically.[1-3] An example of realistic recording of fever is variable that it is not useful in indicating particular analysis constantly a forceful symptomatic exertion is generally legitimized in light of the fact that remedial or palliative measures would so be able to frequently bring into utilization once the finding has been accomplished.

Fever is the most challenging problem in the field of medicine, consists of occult manifestation of common diseases rather than the actual diseases. Fever is a pervasive and ubiquitous theme in human history. Fever is a common finding in illness that it is not surprising to find accurate descriptions of the febrile patients in early-recorded history.[4] Hippocrates and later during the Roman empire, physicians gave detailed descriptions of fever and their varied patterns of presentations.[5] Fever can be defined as an elevation of the body temperature above the normal circadian range as the result of a change in the thermoregulatory centre located in the anterior hypothalamus. An A.M temperature of >37.2°C (98.9°F) or a P.M temperature of > 37.7°C (99.9°F) will be considered as fever.[5-10]

Thrombocytopenia can be defined as a below normal number of platelets in the circulating blood. A normal platelet count ranges from 1, 50,000 to 4, 50,000 platelets/µL of blood. Often patients with thrombocytopenia are asymptomatic and are diagnosed by routine complete blood count. Thrombocytopenia is defined as platelet count <150,000/µl. This is due to decreased production of platelets, increased destruction and increased sequestration in the spleen. Infections is the commonest cause of thrombocytopenia.[6,7] Patients with thrombocytopenia may experience bleeding manifestations such as petechiae, epistaxis, gum bleeding, haematuria, gastrointestinal hemorrhage or intracranial bleeding. It is the most common cause of bleeding in children.[8,9,11]

In tropical country like India patients having acute febrile illness usually have an infectious cause and many of these are associated with thrombocytopenia. Infections like Malaria, Dengue, Leptospirosis, Typhoid, Miliary tuberculosis, Septicemia are the common causes of fever with Thrombocytopenia.[12]

Early diagnosis of this can prevent fatal outcome such as intracerebral bleed, hemorrhage into vital organs, shock and death.[12-18] Most of the time, the patients of fever with thrombocytopenia do not show clinical signs or bleeding manifestations. So in every case of fever, platelet count should be done as a routine investigation to find out the associated thrombocytopenia which will help to make the differential

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diagnosis. Thus a well organized systemic approach needs to be carried out for fever with thrombocytopenia which can help to diagnose and treat the patients early. This will reduce the cost, morbidity and mortality associated with it.[15,17-23] This prospective study was carried out with the aim to evaluate clinical and laboratory profile in patients having fever with thrombocytopenia, its various causes, to find correlation between degree of thrombocytopenia and bleeding manifestations and to study outcome of patients having fever with thrombocytopenia.

MATERIAL AND METHODS

A series of 100 patients admitted in SMBT Medical College and Hospital with fever and thrombocytopenia were evaluated.

Inclusion Criteria

Patient more than 20 years of age.
Patients with fever (temperature >99.90F)
Platelet count less than 1,50,000 cells/cu.mm.

Exclusion Criteria

- All patients less than 12 yrs of age.
- All patients with thrombocytopenia without fever.
- Diagnosed cases of platelet disorders and dysfunction.
- Patients on treatment with antiplatelet drugs and other drugs causing thrombocytopenia.

History was taken regarding duration of fever, occupation and history of travel. Symptoms other than fever, headache, nausea, vomiting, abdominal pain, diarrhea, cough, anorexia, myalgia, gum bleeding, hemetemesis, oliguria, hematuria, loss of weight, etc., were noted.

Signs like rashes, signs of dehydration, petechiae, jaundice, lymphadenopathy, hepatomegaly, splenomegaly, anemia, abdominal tenderness, altered sensorium, etc., were also noted.

Investigations like complete hemogram, ESR, Liver function tests, routine urinary examination, urine for bile salts and bile pigments, Renal parameters like blood urea, serum creatinine, serum electrolytes, peripheral smear, X-ray chest, USG abdomen were done on admission.

Other special investigations like peripheral smear for MP, dengue serology, widal study, IgM antibody for leptospirosis, sputum AFB, ELISA for HIV1 and 2, blood culture and urine culture, bone marrow aspiration.

During the hospital stay, all the patients were subjected repeat CBC once in 2 days. The renal function tests were repeated every third day unless the patient developed ARF for whom the tests were done daily. Follow up of all patients regarding treatment and outcomes were done during the hospital stay.

RESULTS

Analysis of clinical symptoms, laboratory profile and complication of 100 patients presented with fever with thrombocytopenia admitted at SMBT medical college and hospital, between June 2018 to December 2018, who met the inclusion criteria was done.

Out of 100 cases of fever with thrombocytopenia, 62 were males and 38 were females. The maximum number of cases was recorded in the age group of 30-40 years (35%). (Figure-1) The percentage of cases noted in the age groups of 20-30 years, 40-50 years and 50-60 years and >60 years are 27%, 18%, 12% and 8% respectively. The mean age for male and female cases was 34.16 and 31.51 respectively (figure-1).

Etiology	Male	Females	Total
Malaria	25	16	38
Dengue	16	14	30
Septicemia	11	6	17
Typhoid	5	3	8
Viral hepatitis	3	1	4
Alcoholic liver disease	2	0	2
Unknown bite	0	1	1

Table-1: Etiology and gender wise distribution of the cases.

Severity	Recovered	Death	Total
Severe	14	4	18
Moderate	34	1	35
Mild	46	1	47

Table-2: Severity wise outcome of the patients.

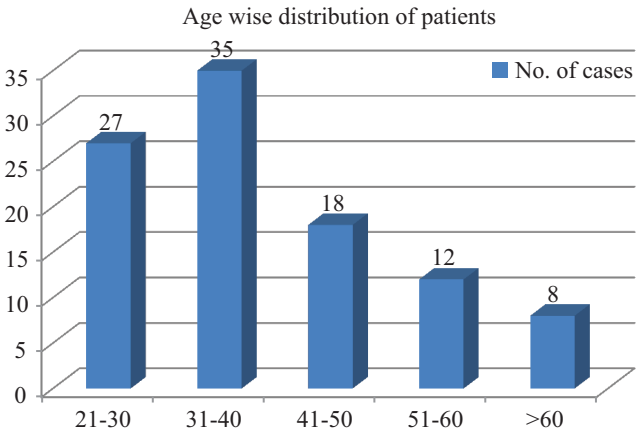

Figure-1: Age wise distribution of cases

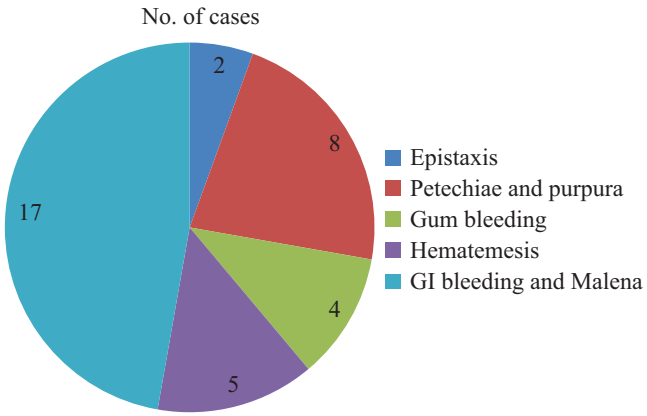

Figure-2: Bleeding manifestations seen in patients.

Etiology of thrombocytopenia

The most common cause was malaria in 38% of cases followed by dengue in 30% of cases, septicemia in 17% of cases, typhoid in 8% of cases, viral hepatitis in 4% of cases, alcoholic liver disease in 2% of cases and 1 patient was of unknown bite. (Table-1) Infections showed seasonal

variation and majority (60%) were in late monsoon and early winter (August to November).

Severity of thrombocytopenia

Thrombocytopenia has been arbitrarily classified as:
Severe - < 50,000cells/cu.mm
Moderate - 50,000 - 1,00,000 cells /cu.mm
Mild - 1,00,000 -1,50,000 cells/cu.mm
Out of these, mild (1,00,000 -1,50,000) thrombocytopenia was seen in 47% of cases, moderate (50,000-1,00,000) thrombocytopenia was seen in 35% of cases and severe (<50,000) thrombocytopenia was seen in 18% of cases. (Table-2) This classification is based on the lowest level of platelet counts seen during their hospital stay.

Bleeding manifestations

Bleeding manifestations were seen in 36 patients. Out of 36 patients with bleeding manifestations, GI (Gastrointestinal) bleeding and malena were found in 17 cases, petechiae and purpura in 8 cases and epistaxis in 2 cases, hematemesis in 5 cases and gum bleeding in 4 cases. (Figure-2) Although malaria is the most common cause of febrile thrombocytopenia, bleeding manifestations were infrequent, even with severe thrombocytopenia. Bleeding manifestations associated with thrombocytopenia were commonly seen among dengue cases. Other conditions which presented with bleeding manifestations were septicemia and unknown bite cases.

Outcome

Out of 100 patients, 94 of them had good recovery and 6 of them expired. In the 6 cases, 2 deaths were due to septicemia, 2 were due to alcoholic liver disease, 1 was due to complicated malaria and 1 was due to unknown bite. Among 6 cases which died, 4 were having severe thrombocytopenia and one each case with moderate and mild thrombocytopenia.

DISCUSSION

Thrombocytopenia is associated with large number of cases of febrile illness. In our study infections formed the largest group and malaria was the commonest infection seen in 38% cases as cause of fever with thrombocytopenia. Our finding correlates with similar other studies.[15-17,19] As in our study, Patil et al[19], Lakum et al[15] and Gandhi et al[17] also found dengue as the second common infectious cause of fever with thrombocytopenia.

Our finding of occurrence of Fever with thrombocytopenia, with male preponderance is similar to other studies.[14-16,18] In our study maximum (60%) cases were seen during late rainy season and early winter season. Similar observations were seen in study by Raikar et al.[18]

In the present study, there were 18% patients with severe thrombocytopenia, 35% patients with moderate thrombocytopenia and 47% patients with mild thrombocytopenia. In Badvi A. J. et al study,[24] severe thrombocytopenia was seen in 60%, moderate thrombocytopenia in 20% and mild thrombocytopenia in 20% of cases.

In our study out of total 36 patients showing bleeding manifestations, petechiae/purpura was seen in 8 cases and this finding differs from finding in the study by Patil et al[19] and by Dash et al[16] in which petechiae accounted for 73.9%, 66% respectively. In the present study, GI bleeding and melena were the commonest type of bleeding manifestations seen in 17 cases, petechiae and purpura were seen in 8 cases, bleeding gums in 4 cases, hematemesis in 5 cases and epistaxis was seen in 2 cases. In Badvi A. J. et al study,[24] petechiae and ecchymosis were seen in 46% of cases, followed by epistaxis and gum bleeding in 34% of cases, subconjunctival hemorrhage in 14% of cases, hematuria in 8% of cases and vaginal bleeding in 1.5% of cases.

In our study good recovery was seen in 94% of cases with rise in platelet count with treatment of underlying cause and platelet transfusion in few cases with very low platelet count. Similar observation of good recovery in 95% and 78% cases was seen in studies by Patil et al[19] and Dash et al[16] respectively. Mortality was 6% and Septicemia and alcoholic liver disease were the major causes in our study. Similarly septicemia was major cause of mortality in Patil et al[19] and Dash et al[16] study with mortality of 5% and 22% respectively.

CONCLUSION

Fever with thrombocytopenia is one of the challenging problems in the field of medicine. Fever with thrombocytopenia consists of common presentations of common diseases rather than rare disease. Infection is the commonest cause of fever with thrombocytopenia. Among infections, malaria was the commonest cause of febrile thrombocytopenia closely followed by dengue fever, especially in epidemic scenarios. Bleeding manifestations associated with thrombocytopenia were seen among dengue cases. Platelet transfusions should be carried out as per WHO guidelines.

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